

# Why Don't Workers Use PPE?

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# The Problem

- Compliance with PPE is frequently poor or inconsistent
- In-use levels of effectiveness often fall short of theoretical effectiveness
- PPE compliance depends on human reliability
- PPE are at the bottom of the hazard control hierarchy for some valid reasons
- In some situations, PPE may be the only control immediately available to reduce exposures

# Overview

- PPE compliance is not as simple as we might think
- PPE usage is not just a worker issue
- Compliance needs to be examined as a multi-component, behavioral process
- Training is important to compliance, but it is not the whole story
- Reinforcement/feedback (behavior-based) strategies can be useful in some situations
- Safety climate is important but our knowledge base is incomplete

# Unpacking the Compliance Process

4 sets of factors or components need to be analyzed for any PPE application

**User      Device      Task      Context**

Attributes of each component can facilitate or impede compliance; in many instances, compliance is only as good as the weakest component

# Factors Influencing Compliance

## ■ User

- knowledge
- attitudes/beliefs
- skill
- risk perceptions
- tolerance/sensitivity
- etc.

## ■ Device

- comfort
- complexity of use
- protective efficacy
- etc.

## ■ Task

- complexity/variability
- hazard frequency
- equipment interoperability
- interpersonal/communication dynamics
- physical/psychological demands
- etc.

## ■ Context

- resources/equipment availability
- work setting/environment
- social/organizational characteristics (micro/macro)
- etc.

# Factors: Traditional View

## ■ User

- knowledge
- attitudes/beliefs
- skill
- risk perceptions
- tolerance/sensitivity
- etc.

## ■ Device

- comfort
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## ■ Context

- resources/equipment availability
- work setting/environment
- social/organizational characteristics (macro/micro)
- etc.

# Factors: Expanded View

## ■ User

- knowledge
- attitudes/beliefs
- skill
- risk perceptions
- tolerance/sensitivity
- etc.

## ■ Device

- comfort
- complexity
- protective efficacy
- etc.

## ■ Task

- complexity/variability
- hazard frequency
- equipment interoperability
- Interpersonal/communication dynamics
- physical/psychological demands
- etc.

## ■ Context

- resources/equipment availability
- work setting/environment
- social/organizational characteristics (micro/macro)
- etc.

# Factors: Interactive Perspective

## ■ User

- knowledge
- attitudes/beliefs
- skill
- risk perceptions
- tolerance/sensitivity
- etc.

## ■ Device

- comfort
- complexity of use
- protective efficacy
- etc.

## ■ Task

- complexity/variability
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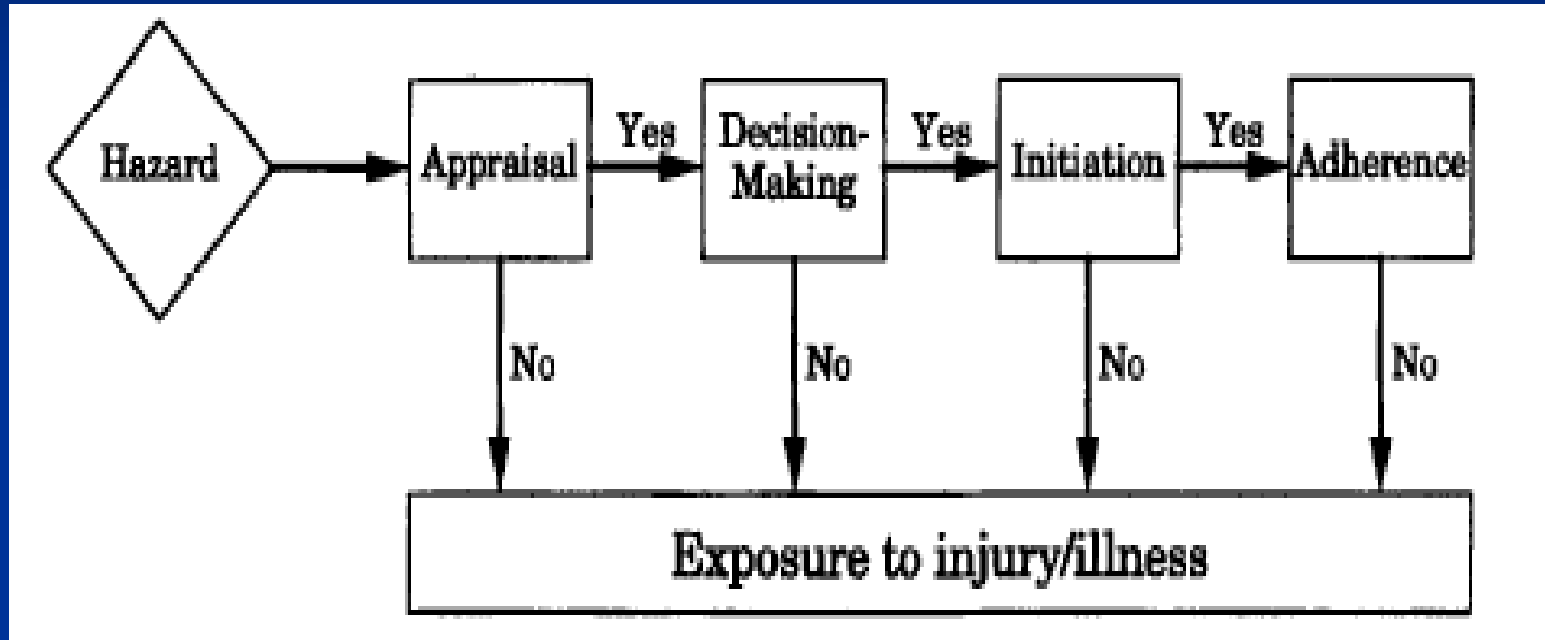
## ■ Context

- resources/equipment availability
- work setting/environment
- social/organizational characteristics (micro/macro)
- etc.





# Stage or Sequential Model of Self-Protective Behavior



DeJoy (1996)

1) Active process, 2) Personal judgments of risk, 3) Stages of compliance

# Self-Protective Constructs & Stages of S-P Behavior

Construct	Hazard Appraisal	Decision-making	Initiation	Adherence
Threat-related beliefs .....	P	S	S	S
Response efficacy .....	P	P	S	S
Self-efficacy .....	S	P	S	S
Facilitating conditions .....	S	P	P	P
Safety climate .....	S	P	P	P

Note: P = primary importance; S = secondary importance

DeJoy (1996)

Different constructs important at different stages

Conditions and climate important to transfer of training

# Training and PPE Compliance

- Training necessary but usually not sufficient
- Correlation between # training hours and compliance is often surprisingly weak
- Type of training is important
  - Knowledge-based
  - knowledge and skill development (behavioral capability)
  - Behavioral modeling, practice, and dialogue (2-way communication) (knowledge, skill, & motivation)

# Self-Protective Constructs & Stages of S-P Behavior

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Response efficacy .....	P	P	S	S
Self-efficacy .....	S	P	S	S
Facilitating conditions .....	S	P	P	P
Safety climate .....	S	P	P	P

Note: P = primary importance; S = secondary importance

Knowledge-based Training      Best Practice-based Training

# Reinforcement/Feedback and Compliance

- Reinforcing compliance can boost rates of compliance, as can providing feedback on performance
- Works best for simple, discrete, frequently repeated behaviors
- Compliance diminishes with withdrawal of reinforcer
- Approach may be susceptible to “gaming”

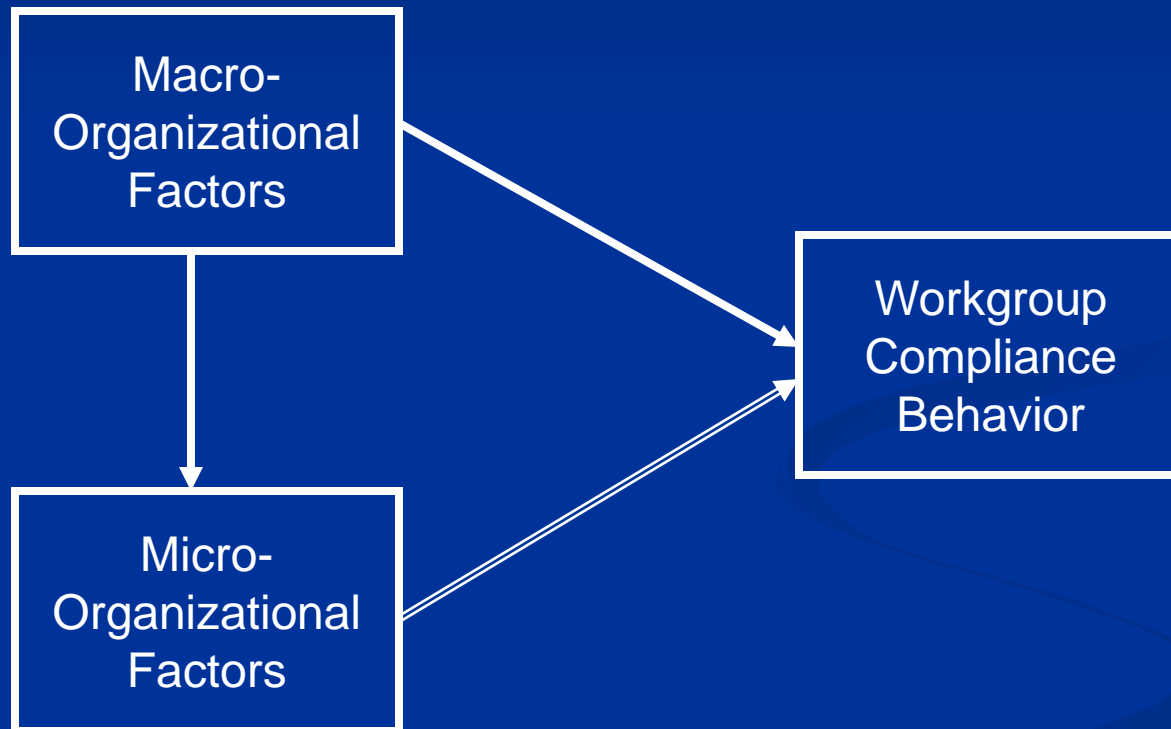
# Safety Climate

- Shared perceptions of employees about the importance of safety (the relative importance of)
- Shapes behavior-outcome expectations
- Management commitment
- Enacted policies and procedures (actions > words)
- Social exchange
- Leading indicator of safety performance

# Safety Climate: Knowledge Base

- Uni-dimensional or Multi-dimensional concept
- No universal agreement on key dimensions of safety climate
- Limited understanding of safety climate antecedents
- Very limited research on safety climate interventions

# Safety Climate: Multi-level Perspective



(e.g., Hofmann et al,1995; Neal & Griffin, 2004; Simard & Marchand,1997)



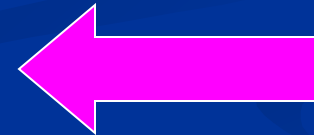
# Micro-Macro Organizational Factors

## ■ Macro Organizational Factors

- Top management support
- HR and management practices
- Structure/technological complexity
- Firm competitive position
- etc.

## ■ Micro-organizational Factors

- Work processes/risks
- Workgroup characteristics
- Communication/involvement
- Supervisor characteristics
- etc.



# Conclusions

- PPE should be considered as part of a comprehensive hazard control strategy
- PPE compliance is a multi-component, behavioral process
- Workers actively make judgments of personal risk
- Different factors are important at different stages of compliance
  - These are potential leverage points
- Training is important but it needs to go beyond basic knowledge
- Facilitating (enabling) conditions and workplace climate enhance transfer of training, and are key to day-to-day, ongoing compliance
- Micro-organizational factors may be initial priority for climate-related intervention
- Participatory/involvement strategies may be more effective than formal/organizational policy statements

# Thanks

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